Jianbo Shen

List of Publications by Year
in descending order

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139 papers	11,695 citations	25014 57 h-index	30894 102 g-index
144 all docs	144 docs citations	144 times ranked	9445 citing authors

#	Article	IF	Citations
1	Phosphorus Dynamics: From Soil to Plant. Plant Physiology, 2011, 156, 997-1005.	2.3	1,127
2	Improving intercropping: a synthesis of research in agronomy, plant physiology and ecology. New Phytologist, 2015, 206, 107-117.	3.5	805
3	Improving crop productivity and resource use efficiency to ensure food security and environmental quality in China. Journal of Experimental Botany, 2012, 63, 13-24.	2.4	465
4	Closing yield gaps in China by empowering smallholder farmers. Nature, 2016, 537, 671-674.	13.7	417
5	P for Two, Sharing a Scarce Resource: Soil Phosphorus Acquisition in the Rhizosphere of Intercropped Species. Plant Physiology, 2011, 156, 1078-1086.	2.3	323
6	Long-term accumulation and transport of anthropogenic phosphorus in three river basins. Nature Geoscience, 2016, 9, 353-356.	5.4	282
7	The critical soil P levels for crop yield, soil fertility and environmental safety in different soil types. Plant and Soil, 2013, 372, 27-37.	1.8	272
8	Acquisition or utilization, which is more critical for enhancing phosphorus efficiency in modern crops?. Plant Science, 2010, 179, 302-306.	1.7	257
9	Integrated Nutrient Management for Food Security and Environmental Quality in China. Advances in Agronomy, 2012, , 1-40.	2.4	253
10	Integrated soil and plant phosphorus management for crop and environment in China. A review. Plant and Soil, 2011, 349, 157-167.	1.8	248
11	Maximizing root/rhizosphere efficiency to improve crop productivity and nutrient use efficiency in intensive agriculture of China. Journal of Experimental Botany, 2013, 64, 1181-1192.	2.4	245
12	Tradeoffs among root morphology, exudation and mycorrhizal symbioses for phosphorusâ€acquisition strategies of 16 crop species. New Phytologist, 2019, 223, 882-895.	3.5	235
13	Integrating legacy soil phosphorus into sustainable nutrient management strategies for future food, bioenergy and water security. Nutrient Cycling in Agroecosystems, 2016, 104, 393-412.	1.1	199
14	Localized application of phosphorus and ammonium improves growth of maize seedlings by stimulating root proliferation and rhizosphere acidification. Field Crops Research, 2010, 119, 355-364.	2.3	187
15	Crop yields, soil fertility and phosphorus fractions in response to long-term fertilization under the rice monoculture system on a calcareous soil. Field Crops Research, 2004, 86, 225-238.	2.3	186
16	Rhizosphere Processes and Management for Improving Nutrient Use Efficiency and Crop Productivity. Advances in Agronomy, 2010, , 1-32.	2.4	181
17	Sustainable Phosphorus Management and the Need for a Long-Term Perspective: The Legacy Hypothesis. Environmental Science & Technology, 2014, 48, 8417-8419.	4.6	161
18	Increased soil phosphorus availability induced by faba bean root exudation stimulates root growth and phosphorus uptake in neighbouring maize. New Phytologist, 2016, 209, 823-831.	3.5	159

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19	Nitric oxide is involved in phosphorus deficiencyâ€induced clusterâ€root development and citrate exudation in white lupin. New Phytologist, 2010, 187, 1112-1123.	3.5	147
20	Past, present, and future use of phosphorus in Chinese agriculture and its influence on phosphorus losses. Ambio, 2015, 44, 274-285.	2.8	147
21	Major Crop Species Show Differential Balance between Root Morphological and Physiological Responses to Variable Phosphorus Supply. Frontiers in Plant Science, 2016, 7, 1939.	1.7	143
22	Linking root exudation to belowground economic traits for resource acquisition. New Phytologist, 2022, 233, 1620-1635.	3.5	129
23	How do roots elongate in a structured soil?. Journal of Experimental Botany, 2013, 64, 4761-4777.	2.4	126
24	Dynamics of phosphorus fractions in the rhizosphere of common bean (Phaseolus vulgaris L.) and durum wheat (Triticum turgidum durum L.) grown in monocropping and intercropping systems. Plant and Soil, 2008, 312, 139-150.	1.8	121
25	Phosphorus uptake and rhizosphere properties of intercropped and monocropped maize, faba bean, and white lupin in acidic soil. Biology and Fertility of Soils, 2010, 46, 79-91.	2.3	121
26	Nutrient uptake, cluster root formation and exudation of protons and citrate in Lupinus albus as affected by localized supply of phosphorus in a split-root system. Plant Science, 2005, 168, 837-845.	1.7	120
27	Deep roots and soil structure. Plant, Cell and Environment, 2016, 39, 1662-1668.	2.8	115
28	Model-Based Analysis of the Long-Term Effects of Fertilization Management on Cropland Soil Acidification. Environmental Science & Technology, 2017, 51, 3843-3851.	4.6	115
29	An overview of the use of plastic-film mulching in China to increase crop yield and water-use efficiency. National Science Review, 2020, 7, 1523-1526.	4.6	112
30	Grain production versus resource and environmental costs: towards increasing sustainability of nutrient use in China. Journal of Experimental Botany, 2016, 67, 4935-4949.	2.4	111
31	Localized fertilization with P plus N elicits an ammonium-dependent enhancement of maize root growth and nutrient uptake. Field Crops Research, 2012, 133, 176-185.	2.3	110
32	Carbon footprint of grain production in China. Scientific Reports, 2017, 7, 4126.	1.6	104
33	An overview of rhizosphere processes related with plant nutrition in major cropping systems in China. Plant and Soil, 2004, 260, 89-99.	1.8	102
34	Root morphological responses to localized nutrient supply differ among crop species with contrasting root traits. Plant and Soil, 2014, 376, 151-163.	1.8	101
35	Transforming agriculture in China: From solely high yield to both high yield and high resource use efficiency. Global Food Security, 2013, 2, 1-8.	4.0	100
36	Role of phosphorus nutrition in development of cluster roots and release of carboxylates in soil-grown Lupinus albus. Plant and Soil, 2003, 248, 199-206.	1.8	95

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37	Combined Applications of Nitrogen and Phosphorus Fertilizers with Manure Increase Maize Yield and Nutrient Uptake via Stimulating Root Growth in a Long-Term Experiment. Pedosphere, 2016, 26, 62-73.	2.1	93
38	Maize responds to low shoot P concentration by altering root morphology rather than increasing root exudation. Plant and Soil, 2017, 416, 377-389.	1.8	90
39	Shaping an Optimal Soil by Rootâ€“Soil Interaction. Trends in Plant Science, 2017, 22, 823-829.	4.3	87
40	Modeling soil acidification in typical Chinese cropping systems. Science of the Total Environment, 2018, 613-614, 1339-1348.	3.9	86
41	Bundling innovations to transform agri-food systems. Nature Sustainability, 2020, 3, 974-976.	11.5	85
42	Enhanced acidification in Chinese croplands as derived from element budgets in the period 1980â€“2010. Science of the Total Environment, 2018, 618, 1497-1505.	3.9	82
43	Daily rhythms of phytomelatonin signaling modulate diurnal stomatal closure via regulating reactive oxygen species dynamics in <i>Arabidopsis</i>. Journal of Pineal Research, 2020, 68, e12640.	3.4	81
44	White Lupin Cluster Root Acclimation to Phosphorus Deficiency and Root Hair Development Involve Unique Glycerophosphodiester Phosphodiesterases Â Â. Plant Physiology, 2011, 156, 1131-1148.	2.3	77
45	Localized application of NH4 +-N plus P at the seedling and later growth stages enhances nutrient uptake and maize yield by inducing lateral root proliferation. Plant and Soil, 2013, 372, 65-80.	1.8	76
46	The regulatory network of clusterâ€root function and development in phosphateâ€deficient white lupin (<i>Lupinus albus</i>) identified by transcriptome sequencing. Physiologia Plantarum, 2014, 151, 323-338.	2.6	76
47	A simple assessment on spatial variability of rice yield and selected soil chemical properties of paddy fields in South China. Geoderma, 2014, 235-236, 39-47.	2.3	76
48	An analysis of <scp>C</scp>hina's grain production: looking back and looking forward. Food and Energy Security, 2014, 3, 19-32.	2.0	75
49	Soil quality assessment of yellow clayey paddy soils with different productivity. Biology and Fertility of Soils, 2014, 50, 537-548.	2.3	73
50	Citrate exudation from white lupin induced by phosphorus deficiency differs from that induced by aluminum. New Phytologist, 2007, 176, 581-589.	3.5	72
51	Impacts of nitrogen fertilizer type and application rate on soil acidification rate under a wheat-maize double cropping system. Journal of Environmental Management, 2020, 270, 110888.	3.8	71
52	Agriculture Green Development: a model for China and the world. Frontiers of Agricultural Science and Engineering, 2020, 7, 5.	0.9	71
53	Update on White Lupin Cluster Root Acclimation to Phosphorus Deficiency Update on Lupin Cluster Roots. Plant Physiology, 2011, 156, 1025-1032.	2.3	69
54	The contribution of atmospheric deposition and forest harvesting to forest soil acidification in China since 1980. Atmospheric Environment, 2016, 146, 215-222.	1.9	67

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55	Neighbouring plants modify maize root foraging for phosphorus: coupling nutrients and neighbours for improved nutrientâ€use efficiency. New Phytologist, 2020, 226, 244-253.	3.5	66
56	Interactions between light intensity and phosphorus nutrition affect the phosphate-mining capacity of white lupin (Lupinus albus L.). Journal of Experimental Botany, 2014, 65, 2995-3003.	2.4	63
57	Soil quality assessment of Albic soils with different productivities for eastern China. Soil and Tillage Research, 2014, 140, 74-81.	2.6	62
58	A shape-based method for automatic and rapid segmentation of roots in soil from X-ray computed tomography images: Rootine. Plant and Soil, 2019, 441, 643-655.	1.8	62
59	Cropland acidification increases risk of yield losses and food insecurity in China. Environmental Pollution, 2020, 256, 113145.	3.7	62
60	Quantification of the contribution of nitrogen fertilization and crop harvesting to soil acidification in a wheat-maize double cropping system. Plant and Soil, 2019, 434, 167-184.	1.8	58
61	Auxin transport in maize roots in response to localized nitrate supply. Annals of Botany, 2010, 106, 1019-1026.	1.4	57
62	Sustainable Cropping Requires Adaptation to a Heterogeneous Rhizosphere. Trends in Plant Science, 2020, 25, 1194-1202.	4.3	56
63	Shift from complementarity to facilitation on P uptake by intercropped wheat neighboring with faba bean when available soil P is depleted. Scientific Reports, 2016, 6, 18663.	1.6	55
64	Intercropping legumes and cereals increases phosphorus use efficiency; a meta-analysis. Plant and Soil, 2021, 460, 89-104.	1.8	55
65	Characterization of Phosphorus in Animal Manures Collected from Three (Dairy, Swine, and Broiler) Farms in China. PLoS ONE, 2014, 9, e102698.	1.1	55
66	Swine manure valorization for phosphorus and nitrogen recovery by catalyticâ€“thermal hydrolysis and struvite crystallization. Science of the Total Environment, 2020, 729, 138999.	3.9	53
67	Is there a critical level of shoot phosphorus concentration for cluster-root formation in Lupinus albus?. Functional Plant Biology, 2008, 35, 328.	1.1	47
68	Contribution of Root Proliferation in Nutrient-Rich Soil Patches to Nutrient Uptake and Growth of Maize. Pedosphere, 2012, 22, 776-784.	2.1	45
69	Rhizosphere properties in monocropping and intercropping systems between faba bean (Vicia faba L.) and maize (Zea mays L.) grown in a calcareous soil. Crop and Pasture Science, 2013, 64, 976.	0.7	44
70	Agri-environment policy for grain production in China: toward sustainable intensification. China Agricultural Economic Review, 2018, 10, 78-92.	1.8	44
71	Management Strategies to Optimize Soil Phosphorus Utilization and Alleviate Environmental Risk in China. Journal of Environmental Quality, 2019, 48, 1167-1175.	1.0	42
72	Wheat root growth responses to horizontal stratification of fertiliser in a water-limited environment. Plant and Soil, 2015, 386, 77-88.	1.8	41

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73	Soil Quality Assessment of Acid Sulfate Paddy Soils with Different Productivities in Guangdong Province, China. Journal of Integrative Agriculture, 2014, 13, 177-186.	1.7	40
74	The responses of root morphology and phosphorus-mobilizing exudations in wheat to increasing shoot phosphorus concentration. AoB PLANTS, 2018, 10, ply054.	1.2	40
75	Effect of localised phosphorus application on root growth and soil nutrient dynamics in situ â€“ comparison of maize (Zea mays) and faba bean (Vicia faba) at the seedling stage. Plant and Soil, 2019, 441, 469-483.	1.8	36
76	Impact of nitrogen form on iron uptake and distribution in maize seedlings in solution culture. Plant and Soil, 2001, 235, 143-149.	1.8	35
77	Formation of cluster roots and citrate exudation by Lupinus albus in response to localized application of different phosphorus sources. Plant Science, 2007, 172, 1017-1024.	1.7	35
78	Contrasting patterns in biomass allocation, root morphology and mycorrhizal symbiosis for phosphorus acquisition among 20 chickpea genotypes with different amounts of rhizosheath carboxylates. Functional Ecology, 2020, 34, 1311-1324.	1.7	35
79	Spatial distribution and expression of intracellular and extracellular acid phosphatases of cluster roots at different developmental stages in white lupin. Journal of Plant Physiology, 2013, 170, 1243-1250.	1.6	33
80	The effect of impedance to root growth on plant architecture in wheat. Plant and Soil, 2015, 392, 323-332.	1.8	33
81	Localized application of NH4+-N plus P enhances zinc and iron accumulation in maize via modifying root traits and rhizosphere processes. Field Crops Research, 2014, 164, 107-116.	2.3	32
82	Competition between Zea mays genotypes with different root morphological and physiological traits is dependent on phosphorus forms and supply patterns. Plant and Soil, 2019, 434, 125-137.	1.8	32
83	GENOTYPIC DIFFERENCE IN SEED IRON CONTENT AND EARLY RESPONSES TO IRON DEFICIENCY IN WHEAT. Journal of Plant Nutrition, 2002, 25, 1631-1643.	0.9	30
84	Localized application of soil organic matter shifts distribution of cluster roots of white lupin in the soil profile due to localized release of phosphorus. Annals of Botany, 2010, 105, 585-593.	1.4	30
85	Guiding phosphorus stewardship for multiple ecosystem services. Ecosystem Health and Sustainability, 2016, 2, .	1.5	30
86	Positive feedback between acidification and organic phosphate mineralization in the rhizosphere of maize (Zea mays L.). Plant and Soil, 2011, 349, 13-24.	1.8	28
87	Cluster-root formation, carboxylate exudation and proton release of Lupinus pilosus Murr. as affected by medium pH and P deficiency. Plant and Soil, 2006, 287, 247-256.	1.8	27
88	Growth Medium and Phosphorus Supply Affect Cluster Root Formation and Citrate Exudation by Lupinus albus Grown in a Sand/Solution Split-Root System. Plant and Soil, 2005, 276, 85-94.	1.8	26
89	Comparing localized application of different N fertilizer species on maize grain yield and agronomic N-use efficiency on a calcareous soil. Field Crops Research, 2015, 180, 72-79.	2.3	26
90	The niche complementarity driven by rhizosphere interactions enhances phosphorusâ€use efficiency in maize/alfalfa mixture. Food and Energy Security, 2020, 9, e252.	2.0	26

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91	Morphological responses of wheat (<i>Triticum aestivum</i>L.) roots to phosphorus supply in two contrasting soils. Journal of Agricultural Science, 2016, 154, 98-108.	0.6	25
92	Heterogeneous phosphate supply influences maize lateral root proliferation by regulating auxin redistribution. Annals of Botany, 2020, 125, 119-130.	1.4	24
93	The Dynamic Process of Interspecific Interactions of Competitive Nitrogen Capture between Intercropped Wheat (Triticum aestivum L.) and Faba Bean (Vicia faba L.). PLoS ONE, 2014, 9, e115804.	1.1	23
94	Hormonal interactions during cluster-root development in phosphate-deficient white lupin (Lupinus) Tj ETQq0 0 0 rgBT /Overlock 10 Tf	1.6	23
95	Quantifying drivers of soil acidification in three Chinese cropping systems. Soil and Tillage Research, 2022, 215, 105230.	2.6	23
96	Banding phosphorus and ammonium enhances nutrient uptake by maize via modifying root spatial distribution. Crop and Pasture Science, 2013, 64, 965.	0.7	22
97	Root competition resulting from spatial variation in nutrient distribution elicits decreasing maize yield at high planting density. Plant and Soil, 2019, 439, 219-232.	1.8	22
98	InÂsitu sampling of small volumes of soil solution using modified micro-suction cups. Plant and Soil, 2007, 292, 161-169.	1.8	21
99	Root Morphology, Proton Release, and Carboxylate Exudation in Lupin in Response to Phosphorus Deficiency. Journal of Plant Nutrition, 2008, 31, 557-570.	0.9	21
100	Root over-production in heterogeneous nutrient environment has no negative effects on Zea mays shoot growth in the field. Plant and Soil, 2016, 409, 405-417.	1.8	21
101	Increasing the agricultural, environmental and economic benefits of farming based on suitable crop rotations and optimum fertilizer applications. Field Crops Research, 2019, 240, 78-85.	2.3	21
102	Cluster Root Formation byLupinus Albusis Modified by Stratified Application of Phosphorus in a Split-Root System. Journal of Plant Nutrition, 2007, 30, 271-288.	0.9	20
103	Synergistic interactions between Glomus mosseae and Bradyrhizobium japonicum in enhancing proton release from nodules and hyphae. Mycorrhiza, 2012, 22, 51-58.	1.3	19
104	A reâ€assessment of sucrose signaling involved in clusterâ€root formation and function in phosphateâ€deficient white lupin (<i>Lupinus albus</i>). Physiologia Plantarum, 2015, 154, 407-419.	2.6	19
105	Dynamics of phosphorus fractions in the rhizosphere of fababean (Vicia faba L.) and maize (Zea mays L.) grown in calcareous and acid soils. Crop and Pasture Science, 2015, 66, 1151.	0.7	17
106	COVID-19 pandemic lessons for agri-food systems innovation. Environmental Research Letters, 2021, 16, 101001.	2.2	17
107	Interactive effects of phosphorus deficiency and exogenous auxin on root morphological and physiological traits in white lupin (Lupinus albus L.). Science China Life Sciences, 2013, 56, 313-323.	2.3	16
108	Root/Rhizosphere Management for ImprovingPhosphorus Use Efficiency and Crop Productivity. , 2019, 103, 36-39.		16

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109	Harnessing root-foraging capacity to improve nutrient-use efficiency for sustainable maize production. Field Crops Research, 2022, 279, 108462.	2.3	15
110	Title is missing!. Nutrient Cycling in Agroecosystems, 2003, 65, 243-251.	1.1	14
111	Heterogeneous nutrient supply promotes maize growth and phosphorus acquisition: additive and compensatory effects of lateral roots and root hairs. Annals of Botany, 2021, 128, 431-440.	1.4	14
112	Innovations of phosphorus sustainability: implications for the whole chain. Frontiers of Agricultural Science and Engineering, 2019, 6, 321.	0.9	14
113	Nitrous oxide and methane emissions from paddy soils in southwest China. Geoderma Regional, 2017, 8, 1-11.	0.9	13
114	Identification of two glycerophosphodiester phosphodiesterase genes in maize leaf phosphorus remobilization. Crop Journal, 2021, 9, 95-108.	2.3	12
115	Deep banding of phosphorus and nitrogen enhances Rosa multiflora growth and nutrient accumulation by improving root spatial distribution. Scientia Horticulturae, 2021, 277, 109800.	1.7	11
116	In addition to foliar manganese concentration, both iron and zinc provide proxies for rhizosheath carboxylates in chickpea under low phosphorus supply. Plant and Soil, 2021, 465, 31-46.	1.8	10
117	Sustainable Resource Use in Enhancing Agricultural Development in China. Engineering, 2018, 4, 588-589.	3.2	9
118	Increased planting density of Chinese milk vetch (Astragalus sinicus) weakens phosphorus uptake advantage by rapeseed (Brassica napus) in a mixed cropping system. AoB PLANTS, 2019, 11, plz033.	1.2	9
119	Wheat growth responses to soil mechanical impedance are dependent on phosphorus supply. Soil and Tillage Research, 2021, 205, 104754.	2.6	9
120	Reducing the environmental footprint of food and farming with Agriculture Green Development. Frontiers of Agricultural Science and Engineering, 2020, 7, 1.	0.9	9
121	Flavonoids are involved in phosphorus-deficiency-induced cluster-root formation in white lupin. Annals of Botany, 2022, 129, 101-112.	1.4	9
122	Stomatal and growth responses to hydraulic and chemical changes induced by progressive soil drying. Journal of Experimental Botany, 2017, 68, 5883-5894.	2.4	8
123	Rhizosphere bacteria containing ACC deaminase decrease root ethylene emission and improve maize root growth with localized nutrient supply. Food and Energy Security, 2021, 10, 275-284.	2.0	7
124	Rhizosphere Processes and Nutrient Management for Improving Nutrient-use Efficiency in Macadamia Production. Hortscience: A Publication of the American Society for Hortcultural Science, 2019, 54, 603-608.	0.5	7
125	Effects of N fertilizer on root growth in Zea mays L. seedlings. Spanish Journal of Agricultural Research, 2008, 6, 677.	0.3	7
126	Localized nutrient supply can facilitate root proliferation and increase nitrogen-use efficiency in compacted soil. Soil and Tillage Research, 2022, 215, 105198.	2.6	7

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127	Ensuring future food security and resource sustainability: insights into the rhizosphere. IScience, 2022, 25, 104168.	1.9	7
128	Leaf Phosphorus Concentration Regulates the Development of Cluster Roots and Exudation of Carboxylates in Macadamia integrifolia. Frontiers in Plant Science, 2020, 11, 610591.	1.7	6
129	Model-based analysis of phosphorus flows in the food chain at county level in China and options for reducing the losses towards green development. Environmental Pollution, 2021, 288, 117768.	3.7	6
130	Effects of nitrogen fertilization on heavy metal content of corn grains. Phyton, 2009, 78, 101-104.	0.4	6
131	Development of a Novel Model of Soil Legacy P Assessment for Calcareous and Acidic Soils. Frontiers in Environmental Science, 2021, 8, .	1.5	5
132	Estimation of the P Fertilizer Demand of China Using the LePA Model. Frontiers in Environmental Science, 2021, 9, .	1.5	5
133	Spatiotemporal Pattern of Acid Phosphatase Activity in Soils Cultivated With Maize Sensing to Phosphorus-Rich Patches. Frontiers in Plant Science, 2021, 12, 650436.	1.7	4
134	TRANSFORMATION OF AGRICULTURE ON THE LOESS PLATEAU OF CHINA TOWARD GREEN DEVELOPMENT. Frontiers of Agricultural Science and Engineering, 2021, 8, 491.	0.9	4
135	Yield and the 15 N Fate in Rice/Maize Season in the Yangtze River Basin. Agronomy Journal, 2019, 111, 517-527.	0.9	3
136	Dynamic growth pattern and exploitation of soil residual P by Brassica campestris throughout growth cycle on a calcareous soil. Field Crops Research, 2015, 180, 110-117.	2.3	2
137	Exploring solutions for sustainable agriculture with “green” and “development” tags in Africa. Frontiers of Agricultural Science and Engineering, 2020, 7, 363.	0.9	2
138	A potential solution for food security in Kenya: implications of the Quzhou model in China. Frontiers of Agricultural Science and Engineering, 2020, 7, 406.	0.9	2
139	Building the new international science of the agricultureâ€“foodâ€“waterâ€“environment nexus in china and the world. Ecosystem Health and Sustainability, 2016, 2, .	1.5	1